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Female Hairstyle and Flight Helmet Accommodation: The AMELIA Project Phase I: Survey Study Part 2: Survey Responses

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March 1999

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Fort Rucker, Alabama 36362-0577

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Most personal protective equipment in current military aviation was designed with male aircrew in mind. To ensure that female aviator performance is not hampered by improperly fitted or sized equipment, the U.S. Navy (USN) established the Aircrew Modified Equipment Leading to Increased Accommodation (AMELIA) program. In this Phase I study, a novel questionnaire was distributed to a variety of USN and U.S. Marine Corps (USMC) aviation installations around the world to assess the effect of female hairstyles on flight helmet performance and safety. One hundred and one completed questionnaires were returned to the U.S. Army Aeromedical Research Laboratory (USAARL) resulting in a response rate of 21-40%. This report (Part 2) contains the raw data of the survey study, while Part 1 comprises the detailed report of the research methods and results.

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Preface

This work was funded by the U.S. Navy under the auspices of the Aircrew Modified Equipment Leading to Increased Accommodation (AMELIA) program. The authors would like to acknowledge Ms. Jean Parker, for her gracious support, consultation, and assistance in formulating the questionnaire; Ms. V. Carol Chancey, for her expertise in database development; and Master Chief Dave Kunkle (USN Ret), for his extensive assistance in distributing and collecting the questionnaires.

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Background to the survey data set

Recent directives by Congress have increased opportunities for female personnel to occupy aviator and aircrew positions in the military. However, most personal protective equipment (e.g., flight helmets, survival vests, gloves, etc.) in current military use was designed with male aircrew in mind. Since there are considerable differences between male and female anthropometry, significant problems accommodating females in military aviation have become common. To ensure that female aviator performance is not hampered by improperly fitted or sized equipment, the U.S. Navy (USN) established the Aircrew Modified Equipment Leading to Increased Accommodation (AMELIA) program.

A survey study; Phase I of an AMELIA-funded research program, was conducted by the U.S. Army Aeromedical Research Laboratory (USAARL) to study the effects of female anthropometric and hairstyle differences on helmet performance and flight safety. The objective of Phase I was to assess current practices and attitudes of USN and U.S. Marine Corps (USMC) female aircrew.

A novel questionnaire was constructed for this study (Appendix). The questionnaire consists of five general sections: demographics, military experience, helmet usage, ancillary equipment and hairstyles. The "demographic" section collects basic descriptive information, while the "military experience" section focuses on the participants' aviation experience. The "helmet usage" section describes the current helmet use patterns by respondents. In the "ancillary equipment" section, respondents were queried regarding their use of various devices including skull caps, eyeglasses, earplugs, chemical biological respirator (CBR) masks, oxygen masks, night vision goggles (NVGs), and helmet fitting systems. Finally, in the hairstyle section, participants were asked about their flight duty hairstyles, hair conditioning, and styling treatments. This section of the questionnaire was developed with the aid of a professional hair styling expert.

Part I of this report contains the details of the methods, analysis, and results of this survey research (McEntire, Murphy, and Mozo., 1999). The present publication, Part II, contains the data tables necessary to allow close inspection of individual subject responses. Certain data fields have been consolidated or omitted to prevent identification of individual respondents. Questions regarding the dataset may be directed to the Commander, U.S. Army Aeromedical Research Laboratory, ATTN: Mr. B. J. McEntire, Fort Rucker, AL 36362.

Survey responses

AMELIA - Phase I (Military Experience and Demographics Section)

ID	Q 1.1 MOS	Q 1.2 Rank	Q 1.4 Squadron/unit	Q 1.5 Current aircraft	Q 1.6 Flight hours current A/C	Q 1.7 Total flight hours	Q 1.8-1.9 Normal aircrew position and duties		Q 2.1 Race	Q 2.2 Age
1	Not included	Not included	Not included	E-2C	60	300	Pilot	Pilot in command, Co-pilot	Not included	Not included
2	Not included	Not included	Not included	C-12	120	1350	Pilot	Pilot in command, Co-pilot	Not included	Not included
3	Not included	Not included	Not included	C-12		1780	Pilot/ copilot	Pilot in command, Co-pilot	Not included	Not included
4	Not included	Not included	Not included	H-53	200	500	Pilot	Pilot in command, Co-pilot	Not included	Not included
5	Not included	Not included	Not included					Physiology Technician (Ride low pressure chamger as inside observer) low pressure chbr obsvr	Not included	Not included
6	Not included	Not included	Not included	E-2C	80	330	Pilot	Pilot in command, Co-pilot	Not included	Not included
7	Not included	Not included	Not included	AV8B, H-1, H46	600	600	Observer	Observer	Not included	Not included
8	Not included	Not included	Not included	E-2C	450	800	Pilot	Pilot in command, Co-pilot	Not included	Not included
9	Not included	Not included	Not included	H-3	150	150	Crewchief	Crew chief, Rescue swimmer	Not included	Not included
10	Not included	Not included	Not included	C-2	500	2400	Crewchief	Crew chief	Not included	Not included
11	Not included	Not included	Not included	C-2		1500	C-12 Aircrew/ C-2 Loadmaster	Crew chief	Not included	Not included
12	Not included	Not included	Not included	H-3	800	1000	Pilot	Pilot in command	Not included	Not included
13	Not included	Not included	Not included	H-53		350	2/P	Co-pilot	Not included	Not included
14	Not included	Not included	Not included	F-14, T-34, E-6, C-130		1480	NAV/ACO - Airborne comm Officer	Navigator/ Mission Commander	Not included	Not included

ID	Q 1.1 MOS	Q 1.2 Rank	Q 1.4 Squadron/unit	Q 1.5 Current aircraft	Q 1.6 Flight hours current A/C	Q 1.7 Total flight hours	Q 1.8-1.9 Normal aircrew position and duties		Q 2.1 Race	Q 2.2 Age
15	Not included	Not included	Not included	H-46	600	1600	Pilot	Pilot in command, Co-pilot	Not included	Not included
16	Not included	Not included	Not included	H-46	643			Aircrew	Not included	Not included
17	Not included	Not included	Not included	H-46	600	800	Pilot	Pilot in command	Not included	Not included
18	Not included	Not included	Not included	H-46	500	850	Pilot	Pilot in command, Co-pilot	Not included	Not included
19	Not included	Not included	Not included	H-46	650	850	Pilot	Pilot in command	Not included	Not included
20	Not included	Not included	Not included	H-46	600	600	Crewchief/ Vert rep crewman	Crew chief, Vert-Rep crewman	Not included	Not included
21	Not included	Not included	Not included			4	Student	Other (Student/NFO)	Not included	Not included
22	Not included	Not included	Not included	TH-57	6	118	Pilot	Copilot/SNA	Not included	Not included
23	Not included	Not included	Not included	T-34	90	90	Student	Flt engineer	Not included	Not included
24	Not included	Not included	Not included	TH-57	29	275	Pilot	Other (Student pilot)	Not included	Not included
25	Not included	Not included	Not included	T-34	80	80	Student	Other (Student pilot)	Not included	Not included
26	Not included	Not included	Not included	T-34		130	SNA	Co-pilot	Not included	Not included
27	Not included	Not included	Not included	C-2	25	2000	1FPC	Crew chief	Not included	Not included
28	Not included	Not included	Not included	H-46	750	1000	Pilot	Pilot in command	Not included	Not included
29	Not included	Not included	Not included	P-3	300	1800	Electronic Warefare	Flt mechanic, Other (Electronic Warfare)	Not included	Not included
30	Not included	Not included	Not included	H-53	15	15	SENSO	Other (SENSO)	Not included	Not included
31	Not included	Not included	Not included	S-3B	16	16	SENSO	Other (SENSOR Operator)	Not included	Not included
32	Not included	Not included	Not included	S-3B	13	13	SENSE	Sonar operator	Not included	Not included
33	Not included	Not included	Not included	H-60	200	400	Pilot	Co-pilot	Not included	Not included
34	Not included	Not included	Not included	H-60	400	1200	Pilot	Co-pilot	Not included	Not included

ID	Q 1.1 MOS	Q 1.2 Rank	Q 1.4 Squadron/unit	Q 1.5 Current aircraft	Q 1.6 Flight hours current A/C	Q 1.7 Total flight hours	Q 1.8-1.9 Normal aircrew position and duties		Q 2.1 Race	Q 2.2 Age
35	Not included	Not included	Not included	H-60	150	350	Pilot	Co-pilot, Student (ATO-Tatics)	Not included	Not included
36	Not included	Not included	Not included	T-34	1000	2500	Pilot/AC/IP	IP	Not included	Not included
37	Not included	Not included	Not included	T-34	85	85	Copilot	Co-pilot	Not included	Not included
38	Not included	Not included	Not included	TH-57	1200	2450	Pilot	Pilot in command	Not included	Not included
39	Not included	Not included	Not included			600		RIO	Not included	Not included
40	Not included	Not included	Not included	S-3B		200	NFO	Co-pilot	Not included	Not included
41	Not included	Not included	Not included	H-60	15	300	Pilot	Other (Student pilot)	Not included	Not included
42	Not included	Not included	Not included	H-46	600		Crewchief	Crew chief	Not included	Not included
43	Not included	Not included	Not included						Not included	Not included
44	Not included	Not included	Not included	S-3B	70	350	Pilot	Pilot in command	Not included	Not included
45	Not included	Not included	Not included	C-2	400	650	Pilot	Co-pilot	Not included	Not included
46	Not included	Not included	Not included	HC-11	1	1255	Pilot	Pilot in command	Not included	Not included
47	Not included	Not included	Not included	P-3			Student	Student	Not included	Not included
48	Not included	Not included	Not included	P-3	50	50	55-3	RIO	Not included	Not included
49	Not included	Not included	Not included	P-3		200	Pilot	Pilot, Co-pilot	Not included	Not included
50	Not included	Not included	Not included	P-3	16	16	SS-3	Other (Student -Radar)	Not included	Not included
51	Not included	Not included	Not included	P-3	58	58	SS-3	Other (Nonacoustic Opertor)	Not included	Not included
52	Not included	Not included	Not included	P-3	36	280	Pilot	Other (Student pilot)	Not included	Not included
53	Not included	Not included	Not included	S-313		650	Copilot	Co-pilot	Not included	Not included
54	Not included	Not included	Not included	AVPHYS		200	Observer	Other (Aviation physics observer)	Not included	Not included
55	Not included	Not included	Not included	H-46	800	980	Pilot	Pilot, Co-pilot	Not included	Not included

ID	Q 1.1 MOS	Q 1.2 Rank	Q 1.4 Squadron/unit	Q 1.5 Current aircraft	Q 1.6 Flight hours current A/C	Q 1.7 Total flight hours	Q 1.8-1.9 Normal aircrew position and duties		Q 2.1 Race	Q 2.2 Age
56	Not included	Not included	Not included	T-34	1500	3000	Instructor	IP	Not included	Not included
57	Not included	Not included	Not included	T-45	80	160	SNA	Other (Student pilot)	Not included	Not included
58	Not included	Not included	Not included				Avaition Preflight Indoctination		Not included	Not included
59	Not included	Not included	Not included						Not included	Not included
60	Not included	Not included	Not included	T-34	116	116		Other (Student pilot)	Not included	Not included
61	Not included	Not included	Not included	CT-39G	750	1300	Pilot	Pilot, Co-pilot	Not included	Not included
62	Not included	Not included	Not included					Other (Student pilot)	Not included	Not included
63	Not included	Not included	Not included	TH-57	10	120	Student Pilot	Other (Student pilot)	Not included	Not included
64	Not included	Not included	Not included						Not included	Not included
65	Not included	Not included	Not included			500		Other (Physiologis)	Not included	Not included
66	Not included	Not included	Not included			450	Pilot	Pilot in command	Not included	Not included
67	Not included	Not included	Not included	T-34	30	30	SNFO	Other (Student pilot)	Not included	Not included
68	Not included	Not included	Not included	T-34	30	30	SNFO	RIO	Not included	Not included
69	Not included	Not included	Not included	T-34	20	30	SNFO	Other (SNFO)	Not included	Not included
70	Not included	Not included	Not included	T-34	3	3	SNFO	Other (SNFO)	Not included	Not included
71	Not included	Not included	Not included	T-34	50	120	SNFO	Other (SNFO)	Not included	Not included
72	Not included	Not included	Not included	T-34, T-2	50	50	Student Pilot	Other (Student pilot)	Not included	Not included
73	Not included	Not included	Not included	TH-57	150	270	Pilot	Co-pilot	Not included	Not included
74	Not included	Not included	Not included	P-3	100	100	Flight Engineer	Flt engineer	Not included	Not included
75	Not included	Not included	Not included	H-46	200	500	Pilot	Flt engineer	Not included	Not included
76	Not included	Not included	Not included						Not included	Not included
77	Not included	Not included	Not included	H-46	2	200	Pilot	Co-pilot	Not included	Not included

ID	Q 1.1 MOS	Q 1.2 Rank	Q 1.4 Squadron/unit	Q 1.5 Current aircraft	Q 1.6 Flight hours current A/C	Q 1.7 Total flight hours	Q 1.8-1.9 Normal aircrew position and duties		Q 2.1 Race	Q 2.2 Age
78	Not included	Not included	Not included	H-60	315	700	Copilot	Co-pilot	Not included	Not included
79	Not included	Not included	Not included	H-46	70	300	Copilot	Co-pilot	Not included	Not included
80	Not included	Not included	Not included	H-46	24	24	2nd Crewman	Crew chief	Not included	Not included
81	Not included	Not included	Not included	H-46	50	2400	Copilot	Co-pilot	Not included	Not included
82	Not included	Not included	Not included	H-46	550	780	Pilot	Pilot in command	Not included	Not included
83	Not included	Not included	Not included	H-60	30	300	Pilot	Pilot in command	Not included	Not included
84	Not included	Not included	Not included	S-3B			SENSO	Sonar operator	Not included	Not included
85	Not included	Not included	Not included	T-34		24		Other (Student pilot)	Not included	Not included
86	Not included	Not included	Not included	P-3		265		Other (Observer)	Not included	Not included
87	Not included	Not included	Not included	T-45	400	1000	Pilot	Pilot in command	Not included	Not included
88	Not included	Not included	Not included						Not included	Not included
89	Not included	Not included	Not included	P-3	16	16	SS-3	Other (EWO)	Not included	Not included
90	Not included	Not included	Not included	T-34	40	40	Pilot	Other (Student pilot)	Not included	Not included
91	Not included	Not included	Not included	TH-57, T-34	100	100	Pilot	Pilot in command	Not included	Not included
92	Not included	Not included	Not included	H-3	1000	1300	Pilot	Pilot, Co-pilot	Not included	Not included
93	Not included	Not included	Not included	P-3	3700	4400	Flight Engineer	Flt engineer	Not included	Not included
94	Not included	Not included	Not included	TH-57	6	120	Pilot	Co-pilot	Not included	Not included
95	Not included	Not included	Not included	T-34	330	1500	Aircraft Commander	Pilot in command	Not included	Not included
96	Not included	Not included	Not included	H-53			AO/AG	Other (Aerial Observer/Gunner)	Not included	Not included
97	Not included	Not included	Not included	P-3	75	325	Pilot	Co-pilot	Not included	Not included
98	Not included	Not included	Not included	H-3	400	600	Crew Chief	Crew chief	Not included	Not included

ID	Q 1.1 MOS	Q 1.2 Rank	Q 1.4 Squadron/unit	Q 1.5 Current aircraft	Q 1.6 Flight hours current A/C	Q 1.7 Total flight hours	Q 1.8-1.9 Normal aircrew position and duties		Q 2.1 Race	Q 2.2 Age
56	Not included	Not included	Not included	T-34	1500	3000	Instructor	IP	Not included	Not included
57	Not included	Not included	Not included	T-45	80	160	SNA	Other (Student pilot)	Not included	Not included
58	Not included	Not included	Not included				Avaition Preflight Indoctination		Not included	Not included
59	Not included	Not included	Not included						Not included	Not included
60	Not included	Not included	Not included	T-34	116	116		Other (Student pilot)	Not included	Not included
61	Not included	Not included	Not included	CT-39G	750	1300	Pilot	Pilot, Co-pilot	Not included	Not included
62	Not included	Not included	Not included					Other (Student pilot)	Not included	Not included
63	Not included	Not included	Not included	TH-57	10	120	Student Pilot	Other (Student pilot)	Not included	Not included
64	Not included	Not included	Not included						Not included	Not included
65	Not included	Not included	Not included			500		Other (Physiologis)	Not included	Not included
66	Not included	Not included	Not included			450	Pilot	Pilot in command	Not included	Not included
67	Not included	Not included	Not included	T-34	30	30	SNFO	Other (Student pilot)	Not included	Not included
68	Not included	Not included	Not included	T-34	30	30	SNFO	RIO	Not included	Not included
69	Not included	Not included	Not included	T-34	20	30	SNFO	Other (SNFO)	Not included	Not included
70	Not included	Not included	Not included	T-34	3	3	SNFO	Other (SNFO)	Not included	Not included
71	Not included	Not included	Not included	T-34	50	120	SNFO	Other (SNFO)	Not included	Not included
72	Not included	Not included	Not included	T-34, T-2	50	50	Student Pilot	Other (Student pilot)	Not included	Not included
73	Not included	Not included	Not included	TH-57	150	270	Pilot	Co-pilot	Not included	Not included
74	Not included	Not included	Not included	P-3	100	100	Flight Engineer	Flt engineer	Not included	Not included
75	Not included	Not included	Not included	H-46	200	500	Pilot	Flt engineer	Not included	Not included
76	Not included	Not included	Not included						Not included	Not included
77	Not included	Not included	Not included	H-46	2	200	Pilot	Co-pilot	Not included	Not included

AMELIA - Phase I (Helmets Section)

ID	Q 3.0 Rotary/Fixed Wing A/C	Q 3.1 Helmet type	Q 3.2a If visor SPH-3C	Q 3.2b Fitting system for SPH-3C	Q 3.3a If visor HGU-33/P	Q 3.3b Fitting system for HGU-33/P	Q 3.4 Fitting sys HGU-55/P
1	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
2	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
3	Fixed	HGU-33/P			Single integrated w/ rigid housing	V-tec liner, chemical poured	
4	Rotary	HGU-84/P					
5	Fixed	HGU-68/P					
6	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
7	Both	HGU-64/P & HGU-33/P	Dual integrated (basic visor system)	V-tec liner, chemical poured	Single integrated w/ rigid housing	V-tec liner, chemical poured	
8	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
9	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)			
10	Fixed	HGU-33/P					
11	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
12	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	V-tec liner, chemical poured			
13	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)			
14	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	

ID	Q 3.0 Rotary/Fixed Wing A/C	Q 3.1 Helmet type	Q 3.2a If visor SPH-3C	Q 3.2b Fitting system for SPH-3C	Q 3.3a If visor HGU-33/P	Q 3.3b Fitting system for HGU-33/P	Q 3.4 Fitting sys HGU-55/P
15	Rotary	SPH-3C & HGU-64/P	Single w/ NVG mount	V-tec liner, not chemical poured			
16							
17	Rotary	HGU-84/P					
18	Rotary	HGU-84/P					
19	Rotary	HGU-84/P					
20	Rotary	SPH-3C & HGU-64/P	Single w/ NVG mount	Adjustable sling suspension (basic system)			
21							
22	Rotary	HGU-84/P					
23	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
24	Rotary	HGU-84/P					
25	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
26	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
27							
28	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)			
29	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
30	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
31	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	

ID	Q 3.0 Rotary/Fixed Wing A/C	Q 3.1 Helmet type	Q 3.2a If visor SPH-3C	Q 3.2b Fitting system for SPH-3C	Q 3.3a If visor HGU-33/P	Q 3.3b Fitting system for HGU-33/P	Q 3.4 Fitting sys HGU-55/P
32	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
33	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	V-tec liner, chemical poured			
34	Rotary	HGU-84/P					
35	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Thermo-plastic liner (TPL)			
36	Fixed	HGU-33/P			Dual integrated with rigid housing	Pad fit (basic system)	
37	Fixed	HGU-33/P			Single snap-on visor	Pad fit (basic system)	
38	Rotary	HGU-67/P					
39							
40	Fixed	HGU-33/P			Dual integrated with rigid housing	Pad fit (basic system)	
41	Rotary	HGU-84/P					
42	Rotary	HGU-84/P					
43	Fixed	HGU-55/P					Thermo-plastic liner (TPL)
44	Fixed	HGU-55/P					Thermo-plastic liner (TPL)
45	Fixed	HGU-33/P			Dual integrated with rigid housing	V-tec liner, chemical poured	
46	Rotary	HGU-84/P					
47	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	

ID	Q 3.0 Rotary/Fixed Wing A/C	Q 3.1 Helmet type	Q 3.2a If visor SPH-3C	Q 3.2b Fitting system for SPH-3C	Q 3.3a If visor HGU-33/P	Q 3.3b Fitting system for HGU-33/P	Q 3.4 Fitting sys HGU-55/P
48	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
49	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
50	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
51	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
52	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
53	Fixed	HGU-33/P					
54	Rotary	HGU-84/P					
55	Rotary	HGU-84/P					
56	Fixed	HGU-33/P			Dual integrated with rigid housing	V-tec liner, chemical poured	
57	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
58							
59							
60	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
61	Fixed	HGU-33/P			Dual integrated with rigid housing	V-tec liner, chemical poured	
62							
63	Rotary	HGU-84/P					
64	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)			

ID	Q 3.0 Rotary/Fixed Wing A/C	Q 3.1 Helmet type	Q 3.2a If visor SPH-3C	Q 3.2b Fitting system for SPH-3C	Q 3.3a If visor HGU-33/P	Q 3.3b Fitting system for HGU-33/P	Q 3.4 Fitting sys HGU-55/P
65	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
66							
67	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
68	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
69	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
70	Fixed	HGU-33/P					
71	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
72	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
73	Rotary	HGU-84/P					
74	Fixed	HGU-33/P					
75	Rotary	HGU-84/P					
76	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)			
77	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	V-tec liner, chemical poured			
78	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Thermo-plastic liner (TPL)			
79	Rotary	HGU-84/P					
80	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)			
81	Rotary	HGU-84/P					

ID	Q 3.0 Rotary/Fixed Wing A/C	Q 3.1 Helmet type	Q 3.2a If visor SPH-3C	Q 3.2b Fitting system for SPH-3C	Q 3.3a If visor HGU-33/P	Q 3.3b Fitting system for HGU-33/P	Q 3.4 Fitting sys HGU-55/P
82	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Thermo-plastic liner (TPL)			
83	Rotary	HGU-84/P					
84	Fixed	HGU-68/P					
85							
86							
87	Fixed	HGU-33/P			Single integrated w/ rigid housing	V-tec liner, chemical poured	
88							
89	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
90	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
91	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
92	Rotary	HGU-84/P					
93	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
94	Rotary	SPH-3C & HGU-64/P	Single w/ NVG mount	Adjustable sling suspension (basic system)			
95	Fixed	HGU-33/P			Dual integrated with rigid housing	Pad fit (basic system)	
96	Rotary	SPH-3C & HGU-64/P					
97	Fixed	HGU-33/P					
98	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	V-tec liner, chemical poured			

ID	Q 3.0 Rotary/Fixed Wing A/C	Q 3.1 Helmet type	Q 3.2a If visor SPH-3C	Q 3.2b Fitting system for SPH-3C	Q 3.3a If visor HGU-33/P	Q 3.3b Fitting system for HGU-33/P	Q 3.4 Fitting sys HGU-55/P
99	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
100							
101	Rotary	HGU-84/P					

Amelia - Phase I (Ancillary Equipment Section)

ID	Q 4.1.1 - 4.1.2 Wear skull cap and why		Q 4.1.1 - 4.1.2 Wear eyeglasses and type		Q 4.2.1 Temple type	Q 4.2.2 Discomfort from temple bayonet		Q 4.2.3 Wear ear plugs and type		Q 4.3.1 - 4.3.2 Problem w/ earplug use	Q 4.3.3
1	Yes	Protect hair, comfort, catches sweat, more sanitary, better seal for hearing protection.	Yes	Plastic covered Bayonet (standard aviator issue, clear, for night flying)	Straight	Yes	Squeeze -- headache. Only worn flying the ball at night. Modification probably not practical.	Yes	E.A.R. (yellow foam)	No	Foams work best.
2	No		No					No			
3	No		No					Yes	E.A.R. (yellow foam)	No	
4	No		No					Yes	E.A.R. (yellow foam)	No	
5	Yes	To keep hair in place.	No					No			
6	Yes	Keeps my hair out of my face.	No					Yes	E.A.R. (yellow foam)		
7	Yes	Because it is available; may absorb some sweat	Yes	Comfort Cables for bayonet	Complete Wrap	No	Yes - when wear straight bayonets therefore have the other type	Yes	E.A.R. (yellow foam)	Other	Itches
8	Yes	Keep hair contained, absorbs sweat, keeps hair from sticking to padding, comfort	No					Yes	E.A.R. (yellow foam)	No	
9	No		No					Yes	E.A.R. (yellow foam)	No	
10	No		Yes		Partial Wrap	Yes	Pressure points and poor earcup seals	Yes		Other	Putting the helmet on sometimes makes them loose.

ID	Q 4.1.1 - 4.1.2 Wear skull cap and why		Q 4.1.1 - 4.1.2 Wear eyeglasses and type	Q 4.2.1 Temple type	Q Discomfort from temple bayonet		Q 4.2.3 Wear ear plugs and type			Q 4.3.1 - 4.3.2 Problem w/ earplug use	Q 4.3.3
11	No		No				Yes	E.A.R. (yellow foam)	protection	Better hearing	No
12	Yes	Hearing protection and better helmet fit	No				No				
13	No		No				Yes	E.A.R. (yellow foam)		No	
14	Yes No	Keeps hair from tangling in the pads -- more comfortable.	Yes	Straight	Yes	Pressure points behind the ear but no poor earcup earseal.	some	E.A.R. (yellow foam)	it was more comfortable to wear earplugs with helmet	EC-130's were so loud	
15	Yes	So if head sweats, it collects the sweat and can wash it	Yes	Straight	Yes	Above the ears	Yes	E.A.R. (yellow foam)		No	
16	Yes	Dirt and grease of helmet and sweat	No				some	E.A.R. (yellow foam)		Yes	Either too big and fall out or helmet ears has no seal because of it being too big
17	No		No				Yes	E.A.R. (yellow foam)		No	
18	No		No				Yes	Triple flange		Yes	Too long so cut down stem
19	No		No				Yes	E.A.R. (yellow foam)		Other	Frequently come out and have to be worked back in during flight.
20	No	Use a Bandana instead	Yes	None	No		No				
21	Yes	To keep hair from being pulled	Yes	straight/partial			Yes	E.A.R. (yellow foam)		No	

ID	Q 4.1.1 - 4.1.2 Wear skull cap and why		Q 4.1.1 - 4.1.2 Wear eyeglasses and type		Q 4.2.1 Temple type	Q Discomfort from temple bayonet		Q 4.2.3 Wear ear plugs and type		Q 4.3.1 - 4.3.2 Problem w/ earplug use	Q 4.3.3
22	No		No					Yes	E.A.R. (yellow foam)	Yes	Sometimes after a few hours the foam expands into the ear cup then presses back into my ear
23	No		No					No			
24			No					Yes	E.A.R. (yellow foam)	No	
25	No		No					No			
26	No		No					No			
27	Yes	To keep hair from getting caught and for cleanliness especially when not using my own helmet.	Yes	mostly contacts, glasses only in emergency	Straight	No		some	E.A.R. (yellow foam)	Other	Only hearing radios
28	No		No					Yes	E.A.R. (yellow foam)	No	
29	No		No					some	E.A.R. (yellow foam)		
30	No		Yes		Straight	Yes	Just in front of the ear.	No			
31	Yes	To keep hair from being pulled out.	No					Yes	E.A.R. (yellow foam)	Yes	Itching
32	No		No					No			
33	Yes	Keeps my hair out of my face, also without skull cap pulls hair andis not comfortable.	No					Yes	E.A.R. (yellow foam)	Yes	After a while they become irritating
34	No		No					No			

ID	Q 4.1.1 - 4.1.2 Wear skull cap and why		Q 4.1.1 - 4.1.2 Wear eyeglasses and type		Q 4.2.1 Temple type	Q Discomfort from temple bayonet		Q 4.2.3 Wear ear plugs and type		Q 4.3.1 - 4.3.2 Problem w/ earplug use	Q 4.3.3
35	Yes	General comfort, keeps sweat away from helmet liner, also keeps hair in place and from being pulled on from helmet wear.	No					Yes	E.A.R. (yellow foam)	No	
36	No		No					Yes	E.A.R. (yellow foam)	No	
37	No		No					Yes	E.A.R. (yellow foam)	No	
38	No		No					Yes	E.A.R. (yellow foam)	No	
39											
40	Yes	Keeps hair out of face, absorbs sweat, protects ear some what.	Sometimes	Contacts somwtimes inhibbit sight	Straight	No		Yes	E.A.R. (yellow foam)	No	
41	No		Yes		Straight	Yes	On top the the ears when I pull off my helmet where the glasses have been digging into my head.	Yes	E.A.R. (yellow foam)	Yes	They sometimes pop out in flight.
42	No		No					No			
43	No		Yes		Straight	No	Get headaches only when I wear them, also the visor pushes them into my nose.	Yes	E.A.R. (yellow foam)	No	
44	No		Yes		Straight	Yes	Hot spots on both side and indentations in	Yes	E.A.R. (yellow foam)	No	
45	Yes	It is easier on hair, doesn't pull or tear.	No					Yes	E.A.R. (yellow foam)	No	
46	No		No					Yes	E.A.R. (yellow foam)	No	

ID	Q 4.1.1 - 4.1.2 Wear skull cap and why		Q 4.1.1 - 4.1.2 Wear eyeglasses and type	Q 4.2.1 Temple type	Q Discomfort from temple bayonet		Q 4.2.3 Wear ear plugs and type		Q 4.3.1 - 4.3.2 Problem w/ earplug use	Q 4.3.3
47	No		Yes	Straight	No		Yes	E.A.R. (yellow foam)	No	
48	No		Yes	Straight	Yes	It is just mostly uncomfortable.	No			
49	No		Yes	Straight	No		Yes	E.A.R. (yellow foam)	No	
50	No		No				Yes	E.A.R. (yellow foam)	No	
51	No		No				Yes	customfitted	No	
52	No		No				Yes	E.A.R. (yellow foam)	No	
53	Yes	To contain hair.	Yes	Straight	No		Yes	E.A.R. (yellow foam)	No	
54	some	Only if I remember to bring it.	No				Yes	E.A.R. (yellow foam)	No	
55	No		No				No			
56	No		No				No			
57	No		No				No			
58										
59			Yes	Partial Wrap						
60	No		No				Yes	E.A.R. (yellow foam)	Other	Some time they fall out when I put my helmet on.
61	Yes	To collect the sweat and keep my hair out of my eyes around face.	No				No			
62			No							

ID	Q 4.1.1 - 4.1.2 Wear skull cap and why		Q 4.1.1 - 4.1.2 Wear eyeglasses and type		Q 4.2.1 Temple type	Q Discomfort from temple bayonet		Q 4.2.3 Wear ear plugs and type		Q 4.3.1 - 4.3.2 Problem w/ earplug use	Q 4.3.3
63	No		No					Yes	E.A.R. (yellow foam)	Yes	They fall out when you sweat.
64			No					No			
65	No		Yes		Partial Wrap	Yes		Yes	E.A.R. (yellow foam)	Yes	
66			No					some	E.A.R. (yellow foam)	No	
67	Yes	To keep my hair out of my eyes, to keep my head cooler and helmet cleaner.	No					some	E.A.R. (yellow foam)	No	
68	Yes	Less friction.	No					No			
69	No		Yes		Straight/Partial wrap	No		Yes	E.A.R. (yellow foam)	No	
70	No		Sometimes	I wear contacts or glasses.	Partial Wrap	No		Yes	E.A.R. (yellow foam)	No	
71	No		No					Yes	E.A.R. (yellow foam)	No	
72	No		No					No			
73	some	More comfortable, protects skin from plastic but makes helmet too tight.	No					Yes	E.A.R. (yellow foam)	Other	They do not always stay in well.
74	No		No								
75	No		No					Yes	E.A.R. (yellow foam)	Other	They pop out when I sweat and turn my head.
76	No		Yes		Straight	Yes	Along side of head near ears.	No			

ID	Q 4.1.1 - 4.1.2 Wear skull cap and why		Q 4.1.1 - 4.1.2 Wear eyeglasses and type		Q 4.2.1 Temple type	Q Discomfort from temple bayonet		Q 4.2.3 Wear ear plugs and type		Q 4.3.1 - 4.3.2 Problem w/ earplug use	Q 4.3.3
77	Yes	So hair does not get pulled and so the helmet slides on more easily	No					Yes	E.A.R. (yellow foam)	No	
78	No		Sometimes	Depends on brightnss of the day, nonprescription sunglasses.	Straight	Yes	Side of my skull just above the ear	Yes	E.A.R. (yellow foam)	Other	They try to pop out.
79	No		No					Yes	E.A.R. (yellow foam)	No	
80	No		No					Yes	E.A.R. (yellow foam)	No	
81	No		No					some	E.A.R. (yellow foam)	Yes	
82	No	The velcro on the neck harness tears my hair out.	Yes		Straight	Yes	I don't hear and get hot spots.	Yes	E.A.R. (yellow foam)	Other	They sometimes come out in flight.
83	some	Keeps hair out of my face and ears	No					Yes	E.A.R. (yellow foam)	Other	They do not stay in very well
84	No		No					No			
85											
86											

ID	Q 4.1.1 - 4.1.2 Wear skull cap and why		Q 4.1.1 - 4.1.2 Wear eyeglasses and type	Q 4.2.1 Temple type	Q Discomfort from temple bayonet		Q 4.2.3 Wear ear plugs and type		Q 4.3.1 - 4.3.2 Problem w/ earplug use	Q 4.3.3
87	Yes	Absorb sweat, was instructed to do so by personel who poured my helmet, keeps my hair up.	No				No		Yes	Can't hear, irritates a problem I have with external OTITIS in South Texas. Lots of ear scratching in the ready room.
88										
89	No		Yes	Straight	No	Have not tried with helemt.	Yes	E.A.R. (yellow foam)	No	
90	No		No				Yes	E.A.R. (yellow foam)	Other	Sometimes the ear plugs expand and fall out then they become a problem within the ear cup, floating around.
91	No		No				Yes	E.A.R. (yellow foam)	Other	Ear cups tend to knock them out when removing and putting on helmet.
92	No		No				No			
93	No		No				No			
94	No		No				Yes	E.A.R. (yellow foam)	No	
95	No		No				Yes	E.A.R. (yellow foam)		

ID	Q 4.1.1 - 4.1.2 Wear skull cap and why		Q 4.1.1 - 4.1.2 Wear eyeglasses and type	Q 4.2.1 Temple type	Q Discomfort from temple bayonet		Q 4.2.3 Wear ear plugs and type		Q 4.3.1 - 4.3.2 Problem w/ earplug use	Q 4.3.3
96	Yes	To absorb sweat and to keep hair flat and back.	No							
97	No		No							
98	Yes	Sanitation reasons. I can wash the cap but I can not wash the form fit.	Yes	Complete Wrap	Yes	From glasses near temples. After about 2 hours.	No			
99	No		Yes	Straight	No		No			
100			Yes	Straight	No	Have not worn with helmet.	Yes	E.A.R. (yellow foam)	No	
101	No		No				Yes	E.A.R. (yellow foam)	Other	Do not hear as well.
101										

AMELIA - Phase I (Ancillary Equipment Section cont.)

ID	Q 4.4.4 CBR mask used and flight hours		Q 4.4.2 Problems w/ CBR mask		Q 4.5.1 - 4.5.2 Oxygen mask used and type			Q 4.5.3 - 4.5.4 Mask size and problems		
1					Sometimes	MBU-12/P		Medium	No	It's fine -- it hurts after a long time, but it's wearable
2	None				Yes		In flight school	Short	Leakage	a bit around the bridge of nose sometimes, but worked fine for 2 years
3	None				No					
4					No					
5					Yes	MBU-12/P		Short	No	With the new helmet, no problems with mask fit
6	None				Yes	MBU-12/P		Medium		
7	None				Yes	MBU-12/P		Short		
8	None				Sometimes	MBU-12/P		Medium	Fit Problems	Comfort level is a matter of use: i.e., the less used to wearing it, the more uncomfortable it is. In flying T-2s, wore it constantly and fit more comfortably. If at all, occasionally too snug under eyes and over bridge of nose
9					No					
10					Yes			Medium	No	
11					No					
12					No					
13					No					
14	AR-5	25	Yes	Some leakage where glasses break seal of mask.	Sometimes		Just on drills	Short	Leakage	Around nose and occasionally around cheeks.
15					No					
16					No					
17					No					

ID	Q 4.4.4 CBR mask used and flight hours	Q 4.4.2 Problems w/ CBR mask	Q 4.5.1 - 4.5.2 Oxygen mask used and type			Q 4.5.3 - 4.5.4 Mask size and problems	
18			No				
19	None		No				
20	None		No				
21							
22	None		No				
23	None		Sometimes	MBU-12/P	if above 10,000 feet	No	
24	None		No				
25	None		Yes	MBU-12/P		Leakage	
26	None		Sometimes	MBU-12/P	Some flights above 10,000 feet requiring mask. Not frequent.	No	
27	None		No				
28	None		No				
29	None		Sometimes	MBU-12/P		Fit Problems	To big for face.
30	None		Sometimes	MBU-12/P	Take off, landing, when above 10,000 feet, and emergencies.	No	
31	None		Yes	MBU-12/P		Leakage	
32	AR-5		Yes	MBU-12/P	Depending upon cabin pressure or any emergencies	Yes	Around the nose
33	AR-5	Not during flight.	No				
34	None		No				
35	None		No				
36	None		Yes	MBU-12/P		No	
37	None		Yes	MBU-12/P		No	

ID	Q 4.4.4 CBR mask used and flight hours	Q 4.4.2 Problems w/ CBR mask	Q 4.5.1 - 4.5.2 Oxygen mask used and type			Q 4.5.3 - 4.5.4 Mask size and problems	
38	None		No				
39							
40	None		Sometimes	MBU-12/P		Fit Problems	Pulls to close to the face under jaw causing it to bite
41	None		Sometimes		Not any more because now a helo pilot.		
42	None		No				
43			Sometimes	MBU-12/P	When required for certain operations, i.e. in-flight refueling.	No	
44			Sometimes	MBU-12/P	Only on high alt flights or carrier launch and landing.	No	
45			No				
46			No				
47	None		No				
48			Yes				
49	None						
50	None		No				
51	None		Sometimes	MBU-12/P		No	
52	None		Sometimes		During simulated emergencies		
53	None		Yes	MBU-12/P		No	
54	None		No				
55	None		No				
56	None		Sometimes	MBU-12/P	Above 10,000 feet	Leakage	
57	None		Yes	MBU-5/P		Leakage	In upper nose to eyes area.

ID	Q 4.4.4 CBR mask used and flight hours		Q 4.4.2 Problems w/ CBR mask	Q 4.5.1 - 4.5.2 Oxygen mask used and type			Q 4.5.3 - 4.5.4 Mask size and problems	
58								
59								
60	None			Sometimes	MBU-12/P	When at altitude	No	
61				No			Leakage	I used to, it leaked
62								
63	None			No				
64					MBU-12/P		Leakage	
65				Sometimes	MBU-12/P	Depends on altitude and mission.	No	
66	None							
67	None			Sometimes	MBU-5/P	Above 10,000 feet	No	
68	None			Sometimes	MBU-12/P	Above 10,000 feet	No	
69	None			Sometimes	MBU-12/P	Above 10,000 feet.	Fit Problems	Mask above cheekbones is hard to adjust.
70	None			Sometimes	MBU-12/P		No	
71	AR-5	3	No	Yes	MBU-5/P		No	
72	None			Sometimes	MBU-12/P	During emergencies, above 10,000 feet.	Fit Problems	across the bridge of the nose
73	None			No				
74		0		No	Full face smoke mask			
75	None			No				
76				Sometimes	MBU-12/P	Above 10,000 feet	Pressure Points	Mask hangs down on nose and causes a lot of pressure.
77	None			No				
78	None			No				

ID	Q 4.4.4 CBR mask used and flight hours	Q 4.4.2 Problems w/ CBR mask	Q 4.5.1 - 4.5.2 Oxygen mask used and type			Q 4.5.3 - 4.5.4 Mask size and problems	
79	None		No				
80	None		No				
81	None		No				
82	None		No				
83	None		No				
84	None		Sometimes	MBU-12/P	Depends on altitude and the different maneuvers.	No	
85							
86							
87	None		Yes	MBU-12/P		No	
88							
89	None		No				
90	None		Sometimes	MBU-12/P	only above 10,000	Leakage	
91	None		Sometimes	MBU-12/P	Above 10,000 feet.	No	
92	None		No				
93	None		Sometimes	MBU-12/P	During a fire or on night flights	No	
94	None		No				
95	None		Yes	MBU-12/P		Fit Problems	Fits poorly over nose, causes discomfort within 10 min on bridge of nose. Leaks between nose and cheeks blowing air into eyes with my head turned in certain directions.
96			No				
97			Sometimes	Full face smoke mask		During smoke drills.	No

ID	Q 4.4.4 CBR mask used and flight hours	Q 4.4.2 Problems w/ CBR mask	Q 4.5.1 - 4.5.2 Oxygen mask used and type	Q 4.5.3 - 4.5.4 Mask size and problems
98	None		No	
99	None		No	
100	None			
101	None		No	

101

AMELIA - Phase I (Ancillary Equipment Section cont.)

ID	Q 4.6.1 - 4.6.2 Use NVGs, type and flight hours		Q 4.6.3 - 4.6.4 Use counterweight and type			Q 4.6.5 Weight amount	Q 4.6.6 Helmet instability	Q 4.7.1 Fitting system type	Q 4.7.2a Pressure points	Q 4.7.2a On left side	Q 4.7.2a On right side
1	No							Foam pads	Yes	Crown	
2	No							Foam pads	Yes	Forehead	
3	No							V-tec (poured)	Yes	Forehead	Forehead
4	No							TPL (pre-fit, bubble wrap type)	Yes	Forehead	Forehead
5	No							TPL (pre-fit, bubble wrap type)	No		
6	No							Foam pads	Yes	Crown and further back	Crown and further back
7	No							V-tec (poured)			
8	No							Foam pads	Yes		Side Ear
9	No							Adjustable sling	Yes	Back, Crown, between, & side ear	Back, Crown, between, & side ear
10	No							Foam pads	Yes	Crown & Back	Crown & Back
11	No							Foam pads			
12	No							V-tec (poured)			
13	No							V-tec (poured)	Yes	Forehead	Forehead
14	No							Foam pads	Yes	Forehead	Forehead
15	Yes	AN/AVS-6	25	No	Just Battery Pack		Yes	V-tec (unpoured)	Yes	Above Ears	Above Ears
16	No								Yes	Forehead & Ears	Forehead & Ears
17	No							TPL (pre-fit, bubble wrap type)	Yes	Front of Ear and chin	Front of Ear and chin
18	No							Foam pads			

ID	Q 4.6.1 - 4.6.2 Use NVGs, type and flight hours			Q 4.6.3 - 4.6.4 Use counterweight and type		Q 4.6.5 Weight amount	Q 4.6.6 Helmet instability	Q 4.7.1 Fitting system type	Q 4.7.2a Pressure points	Q 4.7.2a On left side	Q 4.7.2a On right side
19	No							TPL (pre-fit, bubble wrap type)	Yes	Below Ear	Below Ear
20	Yes	Not sure	30	Yes	Sq. piece of steel, cut to fit under battery pack for goggles	5-8 oz	Yes	Not sure - medium shell	Yes	Crown	Crown
21											
22	No							TPL (pre-fit, bubble wrap type)	Yes	Underneath ear lobe on side of neck	Underneath ear lobe on side of neck
23	No							Foam pads	Yes	The ear and on top of head	The ear, on top of the head
24	No							TPL (pre-fit, bubble wrap type)	Yes	Middle of forehead and side of head directly above the ear	Middle of forehead
25	No							Foam pads	No		
26	No							Foam pads	No		
27	No							Foam pads	No		
28	No							TPL (pre-fit, bubble wrap type)	No		
29	No							Foam pads	Yes	Top of head	Top of head
30	No							Foam pads	Yes	Forehead	
31	No							Foam pads	Yes	Forehead near crown and above the ear	Forehead near the crown
32	No							Foam pads	Yes	Top of forehead and back of head near the crown	Top of forehead and back along the
33	No							V-tec (poured)	Yes		Around the ears and on top of head
34	No							TPL (pre-fit, bubble wrap type)	No		

ID	Q 4.6.1 - 4.6.2 Use NVGs, type and flight hours			Q 4.6.3 - 4.6.4 Use counterweight and type	Q 4.6.5 Weight amount	Q 4.6.6 Helmet instability	Q 4.7.1 Fitting system type	Q 4.7.2a Pressure points	Q 4.7.2a On left side	Q 4.7.2a On right side
35	No						TPL (pre-fit, bubble wrap type)	No		
36	No						Foam pads	Yes		Crown above the ear and temple region
37	No						Foam pads	No		
38	No						TPL (heat fit, bubble wrap type)	Yes	Ears and across the forehead	Ears and across the forehead
39										
40	No						Foam pads	No		
41	No						TPL (pre-fit, bubble wrap type)	Yes	Above ear towards back of head	
42							TPL (pre-fit, bubble wrap type)	No		
43	No						TPL (pre-fit, bubble wrap type)	No		
44	No						TPL (pre-fit, bubble wrap type)	Yes	Above ear	Above the ear and top of head
45	No						V-tec (poured)	Yes	Forehead	Forehead
46	Yes	AN/AVS-6	125	2 "D" cell batteries	10 oz	No	TPL (pre-fit, bubble wrap type)	No		
47	No						Foam pads	Yes	Along forehead	Along forehead
48										
49	No						Foam pads	No		
50	No						Foam pads	Yes	Top of head	Top of head
51	No						Foam pads	No		
52	No						Foam pads	Yes	Top of head and base of skull behind ear	Top of head

ID	Q 4.6.1 - 4.6.2 Use NVGs, type and flight hours			Q 4.6.3 - 4.6.4 Use counterweight and type	Q 4.6.5 Weight amount	Q 4.6.6 Helmet instability	Q 4.7.1 Fitting system type	Q 4.7.2a Pressure points	Q 4.7.2a On left side	Q 4.7.2a On right side
53	No						V-tec (poured)	No		
54	Yes	AN/AVS-6	20			Yes	TPL (pre-fit, bubble wrap type)	No		
55	Yes	AN/AVS-6					TPL (pre-fit, bubble wrap type)	Yes	Forehead and around the outside of ear	Forehead and around out side of the ear
56	No						V-tec (poured)	No		
57	No						V-tec (unpoured)	Yes	Top of head	Top of head
58										
59										
60	No						Foam pads	No		
61	No						V-tec (poured)	Yes	Top of head along the front and back, also above the ear	Top of head front and back, also above the ears
62										
63	No						TPL (pre-fit, bubble wrap type)	Yes		Around the ear
64										
65	No						Foam pads	Yes	Behind ear	
66										
67	No						Foam pads	No		
68	No						Foam pads	Yes	Top of head near the back	
69	No						Foam pads	No		
70	No						Foam pads	No		

ID	Q 4.6.1 - 4.6.2 Use NVGs, type and flight hours		Q 4.6.3 - 4.6.4 Use counterweight and type	Q 4.6.5 Weight amount	Q 4.6.6 Helmet instability	Q 4.7.1 Fitting system type	Q 4.7.2a Pressure points	Q 4.7.2a On left side	Q 4.7.2a On right side
71	No					Foam pads	Yes	Top and rear of head, also above the ear	Top and rear of head, also above the ear
72	No					Foam pads	No		
73	No					TPL (pre-fit, bubble wrap type)	Yes	Forehead and underneath the earlobe	Forehead and underneath the earlobe
74						Foam pads	Yes	Back of head	
75	Yes	AN/AVS-6					No		
76	No					TPL (pre-fit, bubble wrap type)	Yes	Forehead	Forehead
77	No					V-tec (poured)	No		
78	No					TPL (pre-fit, bubble wrap type)	Yes	Forehead	Forehead
79	Yes					TPL (pre-fit, bubble wrap type)	Yes	Forehead	
80	Yes					Foam pads	No		
81	No					TPL (pre-fit, bubble wrap type)	No		
82	No					TPL (pre-fit, bubble wrap type)	Yes	Forehead	Forehead
83	No					TPL (pre-fit, bubble wrap type)	Yes	Side of head above the ears	Side of head above the ears
84	No					TPL (pre-fit, bubble wrap type)	Yes	Above the ear	Above the ear
85									
86									
87	No					V-tec (poured)	No		

ID	Q 4.6.1 - 4.6.2 Use NVGs, type and flight hours	Q 4.6.3 - 4.6.4 Use counterweight and type	Q 4.6.5 Weight amount	Q 4.6.6 Helmet instability	Q 4.7.1 Fitting system type	Q 4.7.2a Pressure points	Q 4.7.2a On left side	Q 4.7.2a On right side
88								
89	No				Foam pads	Yes	Back of the head	
90	No				Foam pads	Yes	Ear lobe	Ear lobe
91	No				Foam pads	No		
92	No				TPL (heat fit, bubble wrap type)	Yes	above ear	above ear
93	No				Foam pads	Yes	Top of head in the rear	Top of head in the rear
94	No				Foam pads	No		
95	No				Foam pads	Yes	Along forehead	Along forehead
96					Foam pads	Yes		Back of head and across forehead
97					Foam pads	No		
98	No				V-tec (poured)	Yes	above the ear, around the eyes where glasses touch, and behind ear at base of skull	Above the ear
99	No				Foam pads	No		
100	No							
101	No				TPL (pre-fit, bubble wrap type)	Yes	Top of head and behind ear	Top of head and behind ear

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AMELIA - Phase I (Ancillary Equipment Section cont.)

ID	Q 7.7.2b Poor stability (yaw, pitch, roll)	Q 7.7.2c Thermal	Q 7.7.2d Overall poor fit of the fitting system
1			Hot Spots
2	Roll	During high workload periods	Too wide
3	Pitch	In hot environments	Too wide,Too loose
4		In hot environments	
5			Too loose
6		Always	Too tight, Difficult to fit, Other
7		In hot environments	
8	Roll	During high workload periods	Too wide, Not adjustable enough, Other
9	ALL	During high workload periods	Too wide,Too long, Too loose, Not adjustable enough
10			Difficult to fit, difficult to adjust
11		During high workload periods	Fits pretty good
12	Pitch	Never	Too wide,Too long, Too loose, Not adjustable enough, Other
13		Always	Too narrow, Too wide,Too long, Too loose, Too tight, Not adjustable enough, Difficult to fit, difficult to adjust
14		In hot environments	Too loose, Other
15	Pitch and yaw	During high workload periods	
16	ALL		
17	Yaw	In hot environments	Too loose
18		In hot environments	Too long
19		Hot environments	Ear cups difficult to adjust rides high on forehead
20	ALL	During high workload periods	Too wide, difficult to adjust

ID	Q 7.7.2b Poor stability (yaw, pitch, roll)	Q 7.7.2c Thermal	Q 7.7.2d Overall poor fit of the fitting system
21			
22		During high workload periods	Other
23	Pitch	During high workload periods	Not adjustable enough, Other
24	Roll	In hot environments, on long flights	Difficult to fit, Other, Stop tight on neck and strap bends under the back.
25		In hot environments	Other, Cuts into my throat when I try to tighten the chin strap.
26		During high workload periods, In hot environments	
27		Always	Too narrow, Too short, Too tight, Difficult to adjust
28		During high workload periods, In hot environments	Too long, Too tight, Not adjustable enough, Difficult to fit, Difficult to adjust
29	ALL	During high workload periods, In hot environments	Too long, Too tight, Not adjustable enough, Difficult to fit, Difficult to adjust
30	Yaw	Always	Not adjustable enough
31	ALL	Always	Too wide, Too tight, Not adjustable enough
32	Pitch	Always	Too tight, Not adjustable enough
33		Never	
34	Pitch	During high workload periods, In hot environments	
35		In hot environments	Too tight, Difficult to adjust, Other, Heaviness, neck sore after a long flight.
36		During high workload periods	Not adjustable enough
37	Roll	Never	Difficult to adjust
38		In hot environments	Too long, Not adjustable enough, Difficult to adjust
39			
40		Other, after long periods of time	Other, have a good fit
41		Other, late in flight	
42		In hot environments	
43		Never	

ID	Q 7.7.2b Poor stability (yaw, pitch, roll)	Q 7.7.2c Thermal	Q 7.7.2d Overall poor fit of the fitting system
44	Pitch	In hot environments	Too wide
45		During high workload periods, In hot environments	
46		In hot environments	
47		In hot environments	Not adjustable enough
48			
49		During high workload periods	
50	ALL	During high workload periods, In hot environments	Too tight, Not adjustable enough, H
51			
52	ALL	Always	Difficult to fit
53		Never	Other, stay to high on head
54	Yaw, Roll	In hot environments	Too wide, Too tight, Other, chinstrap tightened properly, chokes me
55	ALL	Always	Too tight
56		Always	
57	ALL		Too wide, Too long, Too tight
58			
59			
60		Never	
61	Pitch	During high workload periods, In hot environments	Not adjustable enough
62			
63		Never	
64			
65	Pitch	In hot environments	Not adjustable enough
66			

ID	Q 7.7.2b Poor stability (yaw, pitch, roll)	Q 7.7.2c Thermal	Q 7.7.2d Overall poor fit of the fitting system
67		In hot environments	
68		In hot environments	
69		In hot environments	
70	Pitch	Never	Too tight, Not adjustable enough
71		In hot environments	
72	Yaw	In hot environments	Difficult to adjust
73		During high workload periods, In hot environments	Too short, Other, The cover on the liner does not stay in place.
74		In hot environments	Other -Tight in back of neck
75	Pitch	In hot environments	Too wide
76		In hot environments	Not adjustable enough, Difficult to fit, Difficult to adjust
77		In hot environments	Difficult to adjust
78	Pitch, Yaw	During high workload periods	Difficult to fit
79			
80	Pitch	Always	Too tight
81	Pitch	During high workload periods	
82	Pitch	In hot environments	Not adjustable enough
83	Pitch	Other	Too tight, Not adjustable enough, Difficult to fit, Difficult to adjust
84		In hot environments	Difficult to adjust
85			
86			
87			
88			
89	ALL	During high workload periods, In hot environments	Too tight, Not adjustable enough, Difficult to fit

ID	Q 7.7.2b Poor stability (yaw, pitch, roll)	Q 7.7.2c Thermal	Q 7.7.2d Overall poor fit of the fitting system
90	Pitch	In hot environments	Too wide, Too tight, Not adjustable enough
91		Never	Too tight
92		In hot environments	
93	Pitch	In hot environments	Too wide, Not adjustable enough
94	Pitch		
95		In hot environments	
96	Pitch	During high workload periods	Too narrow, Too wide, Too tight, Not adjustable enough, Difficult to adjust
97		In hot environments	Too tight, Not adjustable enough
98	Pitch	In hot environments	Too wide, Too long, Not adjustable enough, Difficult to adjust
99		In hot environments	Too wide
100			
101	Pitch	In hot environments	

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AMELIA - Phase I (Hair Styles Section)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat-treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color	Perm	Straighten	Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
1	short	blond								1		straight (short hair)
2	medium	auburn			2				NONE	2		Pony tail low at nape of neck
3	medium	light brown				4			NONE	4		straight, inside the flight suit collar (long hair)
4	medium	light brown			4	6			No difference b/c usually put up in a braid	2 or 3		French braid
5	extra long	dark brown				12			None	12		French braid
6	medium	blond								2		straight (short hair)
7	medium	light brown								4 or 5		straight (short hair)
8	short	blond								1.5		straight (short hair)
9	long	blond								2		straight, inside the flight suit collar (long hair)
10	extra long	blond			4				None	4		French braid
11	long	brown				12			NONE	2 or 3		pinned up
12	long	blond			6				None	3		pony tail

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color	Perm	Straighten	Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
13	extra long	dark brown								2		straight, inside the flight suit collar (long hair)
14	long	blond			3				None	2		Braid and Fr. Braid
15	extra long	blond/light brown								6		braided
16	medium	dark brown					6		Hair thicker	6		braided, French braid, straight (short hair), up in a bun, pony tail
17	long	brown				12			None	4		French braid, inside the flight suit collar (long hair)
18	medium	brown			6				None	2		French braid
19	medium	brown								1.5		pony tail or straight
20	extra long	red				12			With perm helmet is tighter (hair is thicker) wear helmet in French braid. Without perm I wear helmet with barrette holding hair up on head			French braid, pinned up
21	extra long	auburn/light brown	wavy	none	12	12				2		french braid
22	medium	blond	straight	curling iron		24				2	None	straight (short)
23	medium	blond	straight	blow dry/curling		6				4		straight (short)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color	Perm	Straighten	Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
24	long	light brown	straight	blow dry	1					3	None	straight, inside the flight suit collar (long hair)
25	short	blond	straight	blow dry/curling						2		straight (short hair)
26	medium	light brown	straight	blow dry	4					2		straight (short hair)
27	short	light brown	straight	blow dry/curling				bleaches		7	Had to cut off hair due to comfort; pins, heat etc.	straight (short hair)
28	long	light brown	straight	blow dry	3					2		pony tail
29	extra long	blond	straight	blow dry/curling	1					6	Bulkier when hair is up.	braided
30	short	light brown	wavy	none	3					1	Tight when hair is long	straight (short hair)
31	short	brown	wavy	none						2	How tight it feels at the top of the helmet.	straight (short hair)
32	long	brown	curly	none		12				8	None	french braid
33	medium	light brown	straight	blow dry						3	None	straight, inside the flight suit collar (long hair)
34	short	light brown	straight	blow dry/curling		6				7	None	straight, inside the flight suit collar (long hair)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color	Perm	Straighten	Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
35	medium	light brown	straight	blow dry/curling						2	Usually tighter when hair is longer causing some hot spots and discomfort.	french braid/Straight inside collar
36	extra long	brown	wavy	none						3		french braid
37	medium	blond	curly	blow dry	1							straight (short hair)
38	short	blond	straight	none						2	None	straight (short hair)
39	short	blond	straight	none						2	None	straight (short hair)
40	long	light brown	wavy	blow dry						2	None	french braid
41	short	red	curly	blow dry						1.5	When longer bangs were pushed down in eyes.	straight (short hair)
42	short	brown	wavy	blow dry						4	None	straight (short hair)
43	long	light brown	straight	blow dry	3					3	None	pony tail
44	extra long	blond	straight	blow dry						3	None	braided, inside the flight suit collar
45	extra long	blond/light brown	straight	none						1.5	None	french braid
46	short	light brown	curly	blow dry	6					2	None	straight (short hair)
47	medium	light brown	straight	none	3					1.5		straight (short hair)
48	short	light brown	straight	blow dry	9					3		straight (short hair)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color	Perm	Straighten	Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
49	short	brown	straight	blow dry						1		straight (short hair)
50	medium	blond	wavy	blow dry						2	None	straight (short hair)
51	medium	auburn	wavy	blow dry	6					6	None	pony tail
52	medium	auburn		none	4					3	None	
53	medium	brown	straight	none	3					1	None	straight (short hair)
54	extra long	brown	straight	blow dry						2	When hair is long it gets into my eyes	french braid
55	long	light brown	straight	none						3	None	french braid
56	medium	brown	wavy	blow dry						2	None	straight (short hair)
57	extra long	light brown	straight							6	None	french braid/inside flight suit collar
58	short	brown	wavy	none	6					2		
59	extra long	red	curly	none			5			4		french braid
60	medium	blond	wavy	none						2	None	straight (short hair)
61	long	light brown	straight	blow dry						6	None	pony tail
62	extra long	light brown	wavy			18						french braid
63	medium	dark brown	wavy	none						1	None	up in a bun
64	short	light brown	straight	blow dry						1	None	straight (short hair)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color	Perm	Straighten	Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
65	short	brown	straight	blow dry		6				1.5	None	straight (short hair)
66	short	brown	wavy	blow dry	4					2		pinned up
67	short	auburn	wavy	blow dry						2	None	straight (short hair)
68	long	light brown	wavy	curling iron						4	Better after haircuts.	straight, inside the flight suit collar (long hair)
69	medium	red	straight	blow dry/curling						5	None	straight (short hair)
70	medium	blond	wavy	blow dry						3	None	french braid
71	short	brown	straight	blow dry/curling						1	None	straight (short hair)
72	short	brown	wavy	blow dry						1.5		straight (short hair)
73	medium	blond	straight	none	18	6				1.5		straight (short hair)
74			wavy	blow dry		12						
75	extra long	red/light brown	straight	none						3	None	pony tail pinned up
76	short	light brown	wavy	blow dry	6					2	None	straight (short hair)
77	long	red	wavy	none						6	None	french braid
78	medium	light brown	wavy	none						4	More hair better fit.	pony tail
79	short	blond	straight	none						5	None	straight (short hair)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color	Perm	Straighten	Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
80	long	blond	straight	curling iron						6		french braid
81	short	auburn	straight	blow dry						1	Fits better after	straight (short hair)
82	extra long	blond	wavy	blow dry						4	None	braided
83	short	blond	straight	blow dry						1	None	straight (short hair)
84	long	red	wavy	hot curlers						.5	None	braided
85	extra long	light brown	straight	curling iron						2		
86												
87	long	dark brown	wavy	none						2	None	pinned up
88	long	blond	wavy	blow dry				Highlights		6		
89	long	brown	straight	none						3	None	french braid
90	medium	light brown	straight	none						3	None	straight (short hair)
91	short	brown	curly	blow dry						1	None	straight (short hair)
92	short	light brown	straight	none						2	None	straight (short hair)
93	long	auburn	wavy	none	4					2	None	french braid
94	short	brown	straight	none						4	None	straight (short hair)
95	medium	brown	wavy	none						3	None	Other
96			straight	none								
97			straight	none								

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color	Perm	Straighten	Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
98	short	light brown	straight	blow dry						1		straight (short hair)
99	short	brown	wavy	blow dry	2					1.5		straight (short hair)
100	long	brown	wavy	none		2				1.5		french braid
101	medium	brown	wavy	blow dry						5	None	straight (short hair)

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AMELIA - Phase I (Hair Styles Section cont.)

Q 5.11

ID	Factors that influenced hair style under flight helmet										
	Comfort	Appearance	Performance	Convenience	Instructed to	Regulation	Directed to	Recommendation	Sanitation	Opn Environment	Other
1	1	2	3	4					6	5	FOD Avoidance (bobby Pins, Barettes),Safety
2	1		1								
3	2			1							
4	4	5	2	3							
5		3									Keep it up rather than having to re-braid
6	1	2	5	3						4	Always been this way
7	3	1		4							
8	1	2		3							
9	1										
10		1		1							
11	2										
12	1										Hair in Place
13	1		3	2						4	
14	1	3		2							
15	1										
16											
17	1	1		1							
18	2	3	5	1						4	

Q 5.11

Factors that influenced hair style under flight helmet

ID	Comfort	Appearance	Performance	Convenience	Instructed to	Regulation	Directed to	Recommendation	Sanitation	Opn Environment	Other
19	1			2							
20	1	5	1	1	6		6	6	6	1	
21	7	6	8	5	4	2	3	1	10	9	
22	1		2	4						3	
23	1	10	2	3	5	6	7	8	9	4	
24	2		3	1							
25	2	4	3	1							
26	1			2		3					
27	2	3	4	1							
28	1			2							
29	1	2	3	4		5					Down is a hazzard
30	1		3	2							
31	1	3	2	4	7	1	7	7	6	5	
32	1		1								
33	1		2	3						4	
34	2			3				1			
35	1	1	1	1						1	
36	4	2		3						1	
37	1		1	1							
38	1	1		1							
39				2	6	3	1	4	7	5	
40	2		3			1					

Q 5.11

Factors that influenced hair style under flight helmet

ID	Comfort	Appearance	Performance	Convenience	Instructed to	Regulation	Directed to	Recommendation	Sanitation	Opn Environment	Other
41	2	3		1							
42	2			1							
43	1	10	1	1	10	10		5	5		
44	1			1		1					
45	1	1		1							
46	1	3		2					5	4	
47	1	2		3							
48											
49	1										
50	1	2		2		1			2		
51	1										
52	2	3		1							
53	1	1		1		1					
54				2							Safety hazard
55	1	1				1					
56	1										
57	2							1			
58											
59	2					1					
60	1	1		1							
61	1	1		1							
62											

Q 5.11

Factors that influenced hair style under flight helmet

ID	Comfort	Appearance	Performance	Convenience	Instructed to	Regulation	Directed to	Recommendation	Sanitation	Opn Environment	Other
63	2	3	4	1	8	5	9	10	6		
64	3	2	1	4							
65											
66	1	4		2						3	
67	2		3	1							
68	1	4	2	3							
69	1	4	3	2							
70	1	3	4	2							
71	2	1		3							
72	2	3		1						4	
73	1			2							
74											
75	1		4	5		2					Safety
76	2	3	4	1							
77	1		3	2							
78	1		2	3						4	
79	2	4	5	1		6				3	
80	1		1			1					
81	5	3	4	1			2				
82	1	4	3	2							
83	3	2		4		1					
84	1		1					1			

Q 5.11

Factors that influenced hair style under flight helmet

ID	Comfort	Appearance	Performance	Convenience	Instructed to	Regulation	Directed to	Recommendation	Sanitation	Opn Environment	Other
85											
86											
87	3	2									Safety
88	5	3	6	1	7	2	8	10	9	4	
89	1	2				1		2	2		
90	3	1	4	2						5	
91	1			1							
92	1	3								2	
93	1	2				3					
94	1			2							
95	1									2	
96											
97											
98	1	4		2					5	3	
99	3	2		1						4	
100	2	3	8	1	9	4	10	5	7	6	
101	1	7	2	3				4	5	6	

101

AMELIA - Phase I (Hair Styles Section cont.)

ID	Q 5.12 Flt hours w/ current style	Q 5.13 Change style for environmental conditions		Q 5.14 Other hair styles tried	Q 5.15 Problems encountered with other styles	Additional Comments
1	300	No				
2	300	No		Braided, Straight (short hair)	Cannot wear a braid of any kind in a helmet. As long as hair is down, long or short, it didn't change the fit.	
3	20	No		Straight (short	NONE	
4	200	No		None		Pressure points -- This is a new helmet so still working with it.
5		No		Pony tail		a little too tight over ears
6	300	No		None		Helmet fits crooked -- visor comes down to side of my nose.
7	200	No	Haven't had to but would wear it shorter or permed if hair dryers and curling irons were not accessible	Straight (short		If in difficult operation environment - cut shorter.
8	10	No		Straight, inside flt suit collar (long hair)	Tangling, hair getting in the way, discomfort under helmet since hair shifted around, discomfort due to having ponytail coming from out under helmet--would pull etc.	Not qualified yet (pilot)Fit: Not adjustable enough around ears. Foam pads come loose and shift
9	150	No		Braided, French braid, Pinned p, Pony tail	Any where there is a hair restraining device or a hair mass protruding the helmet creates hot spots.	The helmet liner is very unforgiving. My helmet has play in all directions and still manages to create hot spots
10	1800	No				
11	1500	No		French braid, Up in a bun	Bun is impossible -- helmet hurts head, Fr Braid hurts the top of neck from tucking braid under.	Wear pinned up now but barrettes still dig into my head b/c of helmet. "I'm seriously considering cutting my hair short enough so it doesn't have to be pinned up because of discomfort. Although I've had long hair all my life."
12	300	No		Straight (short hair),Straight, inside flt suit collar (long hair)	Without ponytail, longhair can go all over the place and become uncomfortable	Helmet falls forward on head. Ear pieces not close enough.

ID	Q 5.12 Flt hours w/ current style	Q 5.13 Change style for environmental conditions		Q 5.14 Other hair styles tried	Q 5.15 Problems encountered with other styles	Additional Comments
13		No		French braid, Pinned up	Give hot spots	Helmet is very ill-fitted, too tight in spots, too loose in others. Hot Spots. Poor hearing protection
14	1480	No		French braid		Fitting system - Uncomfortable
15	600	No		French raid, Straight (short hair)	French Braid -- helmet too tight, hot spot in back. Short/Straight - irregular hot	
16	643	No		Twist/ Twist Braid	Depends on what month relater was put	
17	600	Yes	Most often wear it down, occasionally up			Fitting System overall fit: Side to side (too loose) if chin strap is tightened to alleviate this; pressure point under chin. "BETTER THAN ORIGINAL ROTARY WING HELMET!!"
18	100	No		French raid, Straight (short hair)	None--when received the new helmet started French braidlng hair so was fitted for it.	Chin strap is too low
19	200	No		None		
20		No				Poor stability while vert reping missions
21	4	No				Not very much info due to the fact that I am a student aviator.
22	70	Yes	hot-shorter, cold-longer	Fr braid	none	
23	90	No		none		I have alot of pressure on my ears.
24	200	No		Short hair, Pinned up	To uncomfortable because it pulled on my hair.	
25	80	No				
26	130	Yes	I cut it short enough so that I wouldn't have to braid it every day or have the braid press on my head.	none		T would like to be able to french braid my hair, but it is to hot and creates too much pressure on my head.
27	8	No		Pinned up	Uncomfortable, pins, hairclip jabbed head. With hair down hot, sloppy, harassment.	
28	400	No	none	Short hair		
29	300	No		Braided	Makes the helmet tight.	

ID	Q 5.12 Flt hours w/ current style	Q 5.13 Change style for environmental conditions		Q 5.14 Other hair styles tried	Q 5.15 Problems encountered with other styles	Additional Comments
30	15	Yes	Hot cut hair off			
31	8	Yes	Hot and humid, prefer short hair	Long hair inside collar	Hair to bulky under helmet	
32	13	No		none		
33	400	No		none		Good helmet overall. Hair never an issue unless I forget my skull cap and then it can get pulled or in the way.
34	350	No		Braided, Pinned up	Barrettes gave hot spots	
35	150	No		Short hair, Long hair inside collar		
36	2500	No		none	none	
37	85	Yes	When humid or wet pull hair back	none		
38	2400	No		none		Why are we concerned with hair color?
39		No		Pony tail	Uncomfortable	
40		No		Short hair, Pinned up	Short hair was still too long to leave down, needed to be pinned up. The barrettes gave hot spots.	Only real problem was with the helmet strap. I never pulled it tight because it would cut off air when I put my head down to do V lists. This is unsafe because it could come off during ejection etc.
41	300	No		none		
42	10	No		Fr braid, Up in a bun	In a bun made my head sore and the helmet uncomfortable.	
43	450	No		Long hair inside collar	Too hot on neck.	
44	350	No		Fr braid, Long hair inside collar	Pulling of hair if loose, any other hair style like french braid causes hot spots.	
45	150	No		none		
46	800	No		Fr braid, Long hair inside collar	Bad fit so I cut my hair off.	

ID	Q 5.12 Flt hours w/ current style	Q 5.13 Change style for environmental conditions		Q 5.14 Other hair styles tried	Q 5.15 Problems encountered with other styles	Additional Comments
47	100	Yes	Cut shorter.	Long hair inside collar	Inconvenient to put up and then take back down again.	
48	50	No				
49	200	No		none		
50	16	No		none		
51	20	No		Braided, Up in a bun	Uncomfortable	
52	286	No		Fr braid, Up in a bun, Pinned up	Hot spots at braid, bun, and at pin points.	
53	400	No		Other, short and permed	I got straight and flat in the helmet and looked awful.	
54	200	No		none		
55	600	No		Braided, Long hair inside collar		
56	1500	No		Braided	none	Women need a nomex sheath to cover their neck in case of fires in the cockpit. Flight suit collar worn up is not long enough. This is needed regardless of hair length.
57	160	No		Fr braid	Hotspots	
58						
59		Yes				
60		No		Short hair		
61	1500	No		Long hair inside collar	none	
62						
63	120	No		none		
64	2	No		Fr braid, Short hair	A braid changes the fit and causes pressure points	

ID	Q 5.12 Flt hours w/ current style	Q 5.13 Change style for environmental conditions		Q 5.14 Other hair styles tried	Q 5.15 Problems encountered with other styles	Additional Comments
65	500	No				Make short hair a NAVAIR regulation. It will eliminate most if not all female problems. A little personal sacrifice won't hurt for the privilege of flying.
66		Yes	I wear it of my face and neck if hotter, more humid weather	Short hair	Hair in your face, falling down , or coming loose, pressure on head where head gear come in contact with a barrette.	
67	30	No				
68	30	No		Long hair inside collar	Fly away, safety problem.	
69	30	No		Pinned up	Pressure from barrettes sometimes pop open during flight.	
70	3	No		Pony tail		Pressure at the ponytail origin, space between head, helmet around ponytail.
71	120	No				
72	50	No		none		
73	150	No		Fr braid, Short hair	Braids and barrettes cause bad hot spots	The new helmet visor is bad: loose straps, hard to get down, gets scratched easily not enough protection.
74		No		Fr braid, Pinned up	Discomfort in back of head	
75	400	No		Fr braid	Made helmet too tight.	
76	150	No		Fr braid	Put pressure on back of neck.	
77	20	No				French braid makes the helmet feel really tight unless I pull the end out and tuck it in my flight suit.
78	200	Yes	Hot shorter, cold longer.	Fr braid	Uncomfortable	I like the old well pocketed flight suit style. Not the new Airforce pocket on the sides of the hip style.
79	10	No		Long hair inside collar	Uncomfortable and restrictive. Braids and barrettes gave pressure points	
80	24	No		none		Helmet does not fit right if you have bow or barrette in your hair.
81	2400	No		none		

ID	Q 5.12 Flt hours w/ current style	Q 5.13 Change style for environmental conditions	Q 5.14 Other hair styles tried	Q 5.15 Problems encountered with other styles	Additional Comments
82	300	No	Fr braid, Short hair, Long hair inside collar, Up in a bun, Pinned up, Pony tail	Too bumpy, appearance after flight, to messy, bobby pins, bulky	Causes the helmet to tilt forward impairing my vision.
83	150	No	Pinned up	Hot spots and messy	
84		No	Up in a bun, Pinned up	The helmet did not fit correctly.	
85					I have not begun wearing a helmet yet and intend to wear it French braided.
86					
87	400	No	Short hair	none	I grew my hair out after a shore tour and came back to flying after 3 years. the helmet was initially hot in the forehead for 3 months but stretched to accommodate. Other wise I just would have to cut it again. I can't imagine asking to have a new helmet.
88		No	Braided, Short hair, Pinned up		
89	16	No	none		I think it would be more appropriate to give females a more sanitary and convenient urination facility or a flight suit zipper that extends about 6 inches farther, than concerning the Navy with things like your hair not fitting your helmet.
90	40	No	none		
91	100	No			
92	3	No	Fr braid, Pinned up, Pony tail	Maintaining these longer styles without wearing clips or pins, which would be a FOD hazard is practically impossible.	I have just gotten my new helmet and are working out the kinks. The weight and sound proofing are excellent.
93	3700	No	Up in a bun, Pinned up	If hair is not pinned up just right, helmet gives a serious headache.	I normally don't wear my helmet unless in an emergency
94	120	No			

ID	Q 5.12 Flt hours w/ current style	Q 5.13 Change style for environmental conditions		Q 5.14 Other hair styles tried	Q 5.15 Problems encountered with other styles	Additional Comments
95	1000	No		Braided, Short hair, Long hair inside collar, Up in a bun	Terrible hot spots, short hair looks like a boy, inside flight suit every time you turn your head hair gets caught	Don't understand why women are required to wear longer hair inside their flight suit. A guys mustache is not a fire hazard or exposed faces. If my hair caught on fire, my body is protected as is my neck by the flight suit. The helmet protects my head.
96		No		Long hair inside collar, Pony tail	A pony tail gave difficulty pulling the helmet back to get rid of the hot spot on my forehead. Straight hair the helmet will pull my hair if it moves.	Helmet are not the only problem. There are not enough small vests generated to accommodate women. If they do have one small enough it usually crushes my chest.
97		No		Up in a bun, Pony tail	My hair is to long and it gets in the way in a pony tail. The bun hurts in a helmet, my hair gets ripped	Still waiting for better urine collection devices.
98	30	Yes	Hot months I cut it short	Fr braid	None, my braid was form fitted	Flight boots need arches inside. Little more Velcro on waist tabs for smaller waists
99	200	No		none		
100		Yes	When cold I wear it closer to my head and it straightens more.			
101	300	No				

Reference

McEntire, B. J., Murphy, B. A., and Mozo, B. T. 1999. Female hairstyle and flight helmet accommodation: The AMELIA Project, Phase I: Survey Study, Part 1. Research report. Fort Rucker, AL: U.S. Army Aeromedical Research Laboratory. USAARL Report No. 99-

Appendix A.

Female aircrew helmet accommodation questionnaire.

FEMALE AIRCREW HELMET ACCOMMODATION
QUESTIONNAIRE

INSTRUCTIONS: Please take your time to answer the following questions. All answers are completely voluntary and will be held in confidence. You may leave any question unanswered, but we encourage you to respond to all questions. The questions were generated with the intent of better understanding the effects between the various helmet configurations and female aircrew and to identify helmet deficiencies. The information to be gleaned from the questionnaire will help Navy ALSS engineers identify and better understand the helmet problems you are experiencing so that solutions may be attained. All responses will be held confidential.

DATE: _____

1. MILITARY EXPERIENCE

1.1 What is your MOS/Designator? _____

1.2 What is your rank?

Enlisted:	E1	E2	E3	E4	E5	E6	E7	E8	E9
Warrant:	W1	W2	W3	W4	W5				
Officer:	O1	O2	O3	O4	O5	06	07	08	09

1.3 Date of rank? _____

1.4 Assigned squadron/unit? _____

1.5 Currently assigned aircraft? _____

1.6 Number of flight hours in this aircraft? _____

1.7 Total number of accumulated flight hours? _____

1.8 Normal aircrew position? _____

1.9 Normal mission duties:

a.	Pilot in command	f.	Crew chief
b.	Copilot	g.	Flight mechanic
c.	Flight engineer	h.	Test pilot
d.	RIO	i.	Instructor pilot
e.	Sonar operator	j.	Other (describe) _____

2. DEMOGRAPHIC

2.1 What is your age? _____

2.2 What is your race? (Please circle)

a. Alaskan Native

b. American Indian

c. Asian or Pacific Islander

d. Black, not of Hispanic origin

e. Hispanic

f. White, not of Hispanic origin

g. Other (please specify): _____

3. HELMETS

3.1 What helmet configuration do you generally fly with? (Please circle)

ROTARY WING HELMETS

a. SPH-3C & HGU-64/P series (basic rotary-wing helmet) – **Please go to question 3.2**
Based on the traditional rotary wing helmet shell with large eardomes. Various visor assemblies And fitting systems are available in these configurations.

b. HGU-67/P (new AH-1 helmet configuration) – **Please go to section 4.**
Has a TACAIR helmet profile, an integrated chin/nape strap, polystyrene energy liner, pre-Formed thermoplastic liner (TPL™), tapered earcups, leather edgeroll, snap-on single visor, an HTS attachment, and a common mounting block for ANVIS and the helmet sighting reticle.

c. HGU-84/P (new basic rotary wing helmet) – **Please go to section 4.**
Identical to the HGU-67/P except without the HTS attachment block.

FIXED WING HELMETS

a. HGU-33/P series (basic fixed wing/TACAIR helmet) – **Please go to question 3.3.**
Basic fixed wing helmet with various mission and aircraft specific configurations..

b. HGU-55/P (USAF fixed wing basic helmet) – **Please go to question 3.4.**
Has a fiberglass shell, snap on single visor assembly, gray leather edgeroll, and either a pad Fitting system or a thermoplastic liner.

c. HGU-66/P (Night attack helmet) – **Please go to section 4.**
Similar to the basic HGU-55/P except the shell is pre-drilled to accommodate a CATS-EYES Night vision goggle mount and has an integrated chin and nape strap retention assembly.

d. HGU-68/P (New TACAIR helmet) – **Please go to section 4.**
Has a profile similar to the HGU-33/P and HGU-55/P series helmets. New features include a Graphite/nylon helmet shell, a low profile 600 knot single visor system, integrated chin and nape Strap retention harness, thermoplastic liner (TPL™) fitting system, leather covered earcups, and a Black leather edgeroll.

e. HGU-85/P (night attack helmet) – **Please go to section 4.**
Same features as the HGU-66/P except based on the HGU-68/P helmet shell and thermoplastic liner (TPL™) fitting system.

3.2 Please answer the following if your basic helmet is the SPH-3C or HGU-64/P

a. Which visor configuration is mounted on your helmet?
   i. Dual integrated (basic visor system)
   ii. Single with the Helmet Sight Assembly (used in the AH-1 aircraft)
   iii. Single with the Night Vision goggle mount (for SANVIS-6 NVGs)
   iv. Other (describe) _____

b. Which fitting system configuration is installed on your helmet?
   i. Adjustable sling suspension (basic system)
   ii. Leather covered custom liner, chemical poured (V-tec liner)
   iii. Leather covered custom liner, not chemical poured (V-tec liner)
   iv. Thermoplastic liner (TPL™), i.e., bubble wrap
   v. Other (describe) _____

3.3 Please answer the following questions if your basic helmet is based on the HGU-33/P series helmet.

a. Which visor configuration is mounted on your helmet?
   i. Dual integrated with rigid housing
   ii. Single integrated with rigid housing
   iii. Single snap-on visor with leather cover
   iv. Other (describe) _____

b. Which fitting system configuration is installed on your helmet?
   i. Pad fit (basic system)
   ii. Leather covered custom liner, chemical poured (V-tec liner)
   iii. Leather covered custom liner, not chemical poured (V-tec liner)
   iv. Thermoplastic liner (TPL™), i.e., bubble wrap
   v. Other (describe) _____

3.4 If your helmet is an HGU-55/P, which fitting system configuration is installed?
   i. Two-piece leather covered custom liner.
   ii. Thermoplastic liner (TPL™), i.e., bubble wrap
   iii. Other (describe) _____

4. ANCILLARY EQUIPMENT

4.1 SKULL CAPS

4.1.1 Do you wear a skull cap with the helmet? Yes No Sometimes (please explain)

_____

_____

4.1.2 If you wear a skull cap, please explain why you do so? _____

_____

_____

4.2 EYEGLASSES

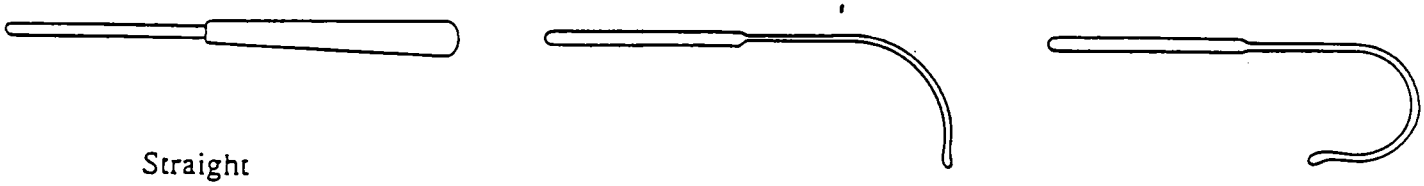
4.2.1 Do You wear eyeglasses (corrective lens or sunglasses) with the helmet?

Yes No Sometimes (If no, go to question 4.3. If sometimes, please explain.)

_____

_____

4.2.2 What type of temple bayonet do your eyeglasses have?



Straight Partial wrap complete wrap

4.2.3 Do you experience any discomfort, pressure points, or poor earcup earseal resulting from the eyeglasses temple bayonet? (Please explain) _____

_____

_____

4.3 EARPLUGS

4.3.1 Do you wear earplugs under your helmet? Yes No Sometimes (If no, please go to 4.4. If sometimes, please explain.) _____

_____

_____

4.3.2 What type of earplug do you routinely use?

E.A.R. (yellow foam)
Triple flange
Moldable wax
Custom fitted
Other (please identify or describe) _____

4.3.3 Do you experience any pain, discomfort or any other problems from the use of earplugs? (Please explain) _____

_____

_____

4.4. CBR MASKS

4.4.4 Which chemical/biological protective mask have you used (please approximate the number of flight hours)?

AR-5 _____ Other (specify) _____ None (go to 4.5)

4.4.2 Did you have any fit problems or experience any pressure points, hot spots, or other discomfort with the CBR mask? (Please explain and describe) _____

_____

_____

_____

_____

4.5 OXYGEN MASKS

4.5.1 Do you wear an oxygen mask while performing flight duties?

Yes No (if no, go to 4.6) Sometimes (please explain) _____

_____

_____

4.5.2 Which oxygen mask do you normally use?

a. MBU-5/P (Air Force custom made)
b. MBU-12/P (USN/USMC/USAF standard issue)
c. Other (Please identify or describe) _____

_____

4.5.3 What size is your oxygen mask?

Short Medium Long X-long

4.5.4 Do you have any fit problems, leakage, pressure points, or experience other discomfort with the oxygen mask? (Please explain or describe) _____

_____

_____

_____

_____

4.6 NVGs

4.6.1 Do you use night vision goggles (NVGs)? Yes No (If no, go to 4.7)

4.6.2 What type of NVGs have you used and approximately how many hours have you accumulated with them?

AN/AVS-6 _____ CatsEye _____ PNVS-5 _____ Other (list)_____

4.6.3 Do you use a counterweight with the NVGs? Yes No (:If no, go to 4.7)

4.6.4 What do you use as a counterweight? _____

4.6.5 Approximately how much does the counterweight weigh? _____ oz/lb/gm

4.6.6 Do you experience helmet instability when using the NVGs? Yes No

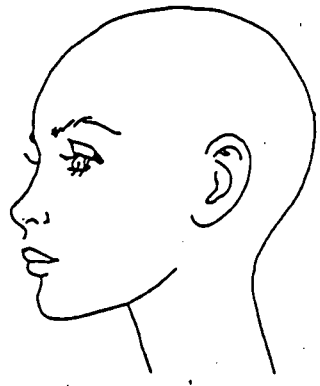
4.7 HELMET FITTING SYSTEM

4.7.1 What type of fitting system does your helmet have?

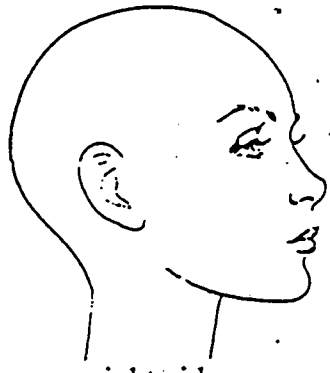
a. V-tec (unpoured)
b. V-tec (poured)
c. Foam pads
e. TPL™ (pre-fit, bubble wrap type)
f. TPL™ (heat fit, bubble wrap type)
g. Adjustable sling

4.7.2 Which of the following do you experience with your helmet fitting system?

a. Pressure points (hot spots)? Yes No (If yes, please chart locations below)



left side



right side

b. Poor stability resulting in helmet movement about the _____axis (pitch, yaw, roll).

c. Thermal discomfort (i.e., heat buildup)
(1) Always
(2) Only during high workload periods
(3) Usually in hot environments (summer, tropical, etc.)
(4) Never
(5) Other (describe) _____

d. Overall poor fit, i.e., the fitting system is (please circle all that apply):
(1) Too narrow
(2) Too wide
(3) Too short
(4) Too long
(5) Too loose
(6) Too tight
(7) Not adjustable enough
(8) Difficult to fit
(9) Difficult to adjust
(10) Other _____

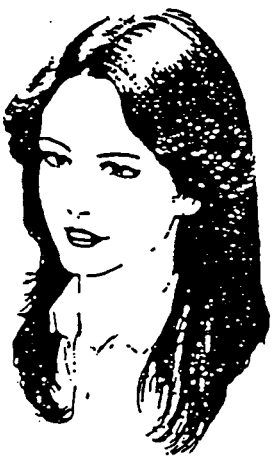
5. HAIR STYLES

5.1 What is the general length of your hair? (Please circle or sketch your hair line, if not illustrated.)

a. short – off the neck

b. medium – top of the shoulders

c. long – over the shoulders



d. extra long – below the shoulder blades

5.2 Which of the following best describes your natural hair color? (Please circle)

a. auburn	d. blonde	g. dark brown
b. red	e. light brown	h. gray
d. black	f. brown	

5.3 Which of the following best describes your natural hair body? (Please circle)

a. straight b. wavy c. curly

d. other (describe): _____

5.4 Do you routinely heat treat your hair? Yes No (If yes, please circle the method used most frequently)

a. blow dry
b. hood hair dryer
c. curling iron
d. flat iron
e. hot curlers
f. other (describe) _____

5.5 Do you chemically treat your hair with any of the following? Yes No (If no, go to 5.8) Please circle all that apply.

a. coloring
b. permanents
c. straighteners
d. other (describe): _____

5.6 Approximately how often do you chemically treat your hair with

a. coloring, every _____ months
b. permanents, every _____ months
c. straighteners, every _____ months
d. other, every _____ months

5.7 What differences in helmet comfort and performance do you notice between hair chemical treatments? _____

_____

_____

5.8 Approximately how often do you cut your hair? Every _____ months.

5.9 What differences in helmet comfort and performance do you notice between hair cuts?

_____

_____

5.10 Which of the following best describes your hair style under your flight helmet? (Please circle)

a. braided
b. french braid
c.. straight (short hair)
d. straight, inside the flight suit collar (long hair)
e. up in a bun
f. pinned up
g. pony tail
h. other (describe) _____

_____

5.11 What factors influenced your decision to use this hair style under your flight helmet? (Please rank all that apply in order of importance, 1 = highest importance, etc.)

_____ a. comfort
_____ b. appearance
_____ c. helmet performance
_____ d. convenience
_____ e. instructed to do so
_____ f. regulation
_____ g. directed to do so
_____ h. recommendation
_____ i. sanitation
_____ j. operational environment (hot/cold/humid)
_____ k. other (describe): _____

5.12 Approximately how many flight hours do you have with your current hair style? _____

5.13 Do you change your flight hair style for various environmental conditions (i.e., hot, cold, wet, humid, dry)? Yes No (If yes, please describe changes) _____

_____

_____

_____

5.14 What other hair style(s) have you tried under your helmet? (Circle all that apply)

a. braided
b. french braid
c. straight (short hair)
d. straight, inside flight suit collar (long hair)
e. up in a bun
f. pinned up
g. pony tail
h. other (describe): _____

_____

5.15 What problems did you experience with these other hair styles? _____

_____

_____

_____

_____

_____

Please add any additional comments you would like to make regarding ALSS: _____

_____

_____

_____

_____

_____

_____